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RESEARCH
PAPER

The agile web - part ii

Developing a consistent experience

March 2013

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Executive summary

Many of the UK's IT leaders are not directly involved in the design of their organisations' web presences and how these websites work on the broad range of mobile devices that customers and citizens now use every day.

That was the conclusion of an exclusive *Computing* survey of nearly 200 IT leaders and senior IT strategists across every sector of the UK economy – three-quarters of them in organisations employing more than 1,000 people, and 52 percent employing more than 5,000. These findings of the survey were explored in a separate whitepaper (*The agile web part i: Why considering users' different device types is essential for future success* – March 2013)

However, the research also revealed that many senior IT specialists have never looked at their own organisations' websites on a mobile device. Many have no idea of the extent to which new, more mobile usage models have been adopted by citizens, customers, clients, partners and other users, and how this may affect their interactions with the organisation.

In many cases, a picture emerges of organisations that are failing to consider the different technological and design implications of web content and application consumption via small-screen, mobile and/or touch-sensitive interfaces. In short, technology that has the potential to more strongly connect organisations with their users is leaving some increasingly remote and disconnected from their customers.

The complex tapestry of different devices, operating systems and screen sizes poses a challenge for both website and app developers, as, increasingly, downloadable apps replace traditional browser-based access to static websites. In either case, developers should consider working towards a 'write once, deploy many' approach to web and app development. Businesses should consider consolidating web production so that one code works for all devices.

Working smarter

Smartphones, tablets, ultrabooks, convertibles, smart TVs, games stations and media players: just some of the devices that are now regularly used to browse the web and to interact with organisations' services.

But those different devices also mean different user requirements for how a website behaves and the content it presents, because these devices are typically used in different scenarios. Organisations therefore urgently need to consider how users' different requirements may impact on how websites are designed and how they present information to different devices, such as smartphones, tablets and ultrabooks/convertibles.

However, this is just the surface of the problem for organisations in the 21st century. In many cases, users may access a website from multiple devices in an average day: a smart TV or games station in the living room, a laptop in the home office, a smartphone on the train into work, a desktop computer while in the office, and a tablet while sitting in a cafe on their lunch break as they catch up with the latest news from their own networks and social media feeds.

If those users access the same website from multiple devices, the chances are that they may expect a similar (if not identical) experience and the same core information. However, if their chosen website presents a radically different informational experience on each device – in which data they are seeking is invisible or hard to access via a mobile device, but instantly available on the desktop – then they may find the experience disorientating and off-putting.

The agile web

The challenge, then, is this: agile web development for a multiplicity of devices is not just about the hardware, the operating system, the browser and the screen size or format. It is also about the radically different usage scenarios that each device enables, and the different requirements that people might have from each. In the meantime, the organisation's brand values, design standards and information quality and accessibility are constants and will be judged on that basis.

For example, sitting at a desk and reading the text of the 'How to find us' section of an organisation's website is a different experience to standing in the street with a smartphone, attempting to square the user's own GPS location with the supposed location of the office. Browsing the homepage of an international news portal on a laptop is different to wanting the latest headlines on a smartphone while walking to a meeting.

Organisations should consider these different scenarios – enabled by different devices – when designing their web presences. The underlying experience, design and quality needs to stay constant, but the ways in which the information is presented may need to be reconsidered for each device type or situation.
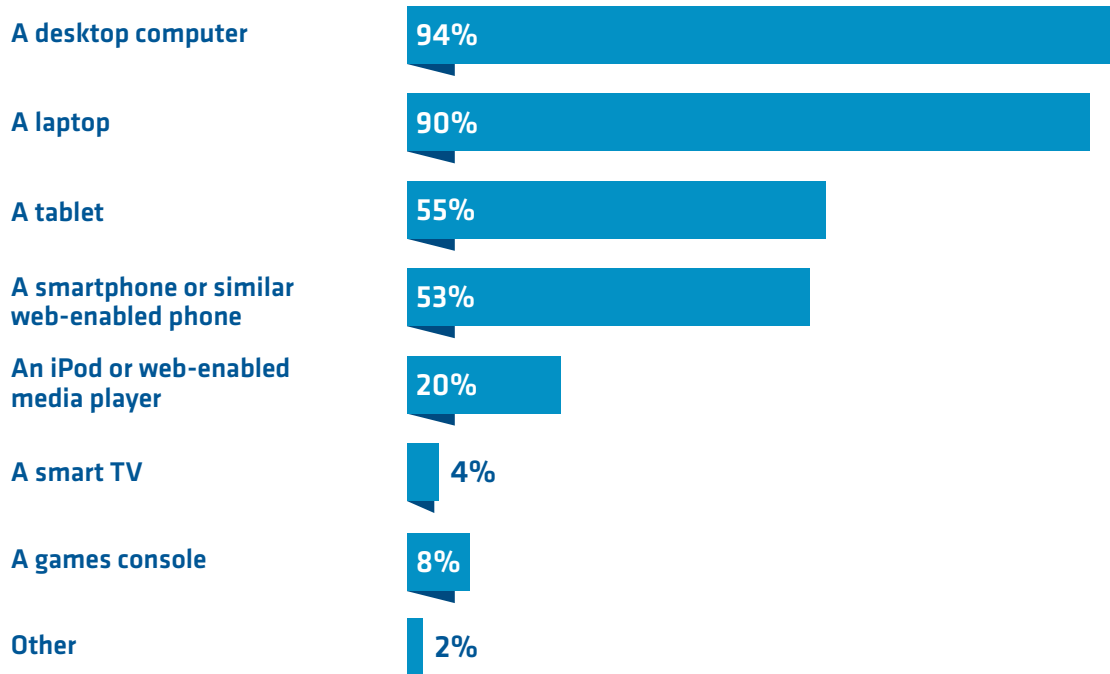
But of course, traditional browser-based access to websites is no longer the preferred route for accessing organisations' web presences via smartphones, tablets, ultrabooks/convertibles and other mobile or hybrid devices. The massive popularity of downloadable apps has provided an alternative route that has replaced traditional browser-based access to static websites.

More, apps allow developers to create enhanced experiences that allow much deeper levels of interactivity with organisations' content and services.

But the number of new device types and form factors – and with a multiplicity of new models and upgrades emerging all the time – creates a complex tapestry for app developers. This is why they should consider working towards a 'write once, deploy many' approach to web and app development. Businesses should consider consolidating web production so that one code works for all devices.

But to answer such questions demands that senior IT specialists at least be familiar with their own organisation's web strategies and presences. Alarmingly, the *Computing* survey found that this is not always the case. This fact alone suggests a serious underlying malaise within the UK's IT departments, in that they are not just disconnected from the design processes behind frontline apps and web presences, but also lack any interest in them.

Asked whether they had ever looked at their own organisation's services on a tablet, just 55 percent said that they had (Fig. 1). The figure was even lower for smartphones (53 percent). Smart TVs barely registered on IT leaders' radar: just four percent said that they had looked at their organisation's web presence on one. Faced with such statistics, how can IT leaders hope to have any understanding of their customers' experiences or access problems?

Fig. 1: Have you ever looked at your own organisation's website on...

A desktop computer	94%
A laptop	90%
A tablet	55%
A smartphone or similar web-enabled phone	53%
An iPod or web-enabled media player	20%
A smart TV	4%
A games console	8%
Other	2%

* Respondents could select more than one answer

Intriguingly, the largest number of respondents – 94 percent – said they had looked at their organisation's website on a desktop computer, suggesting that six percent of IT leaders may never have looked at it on any device. If true, this is extraordinary.
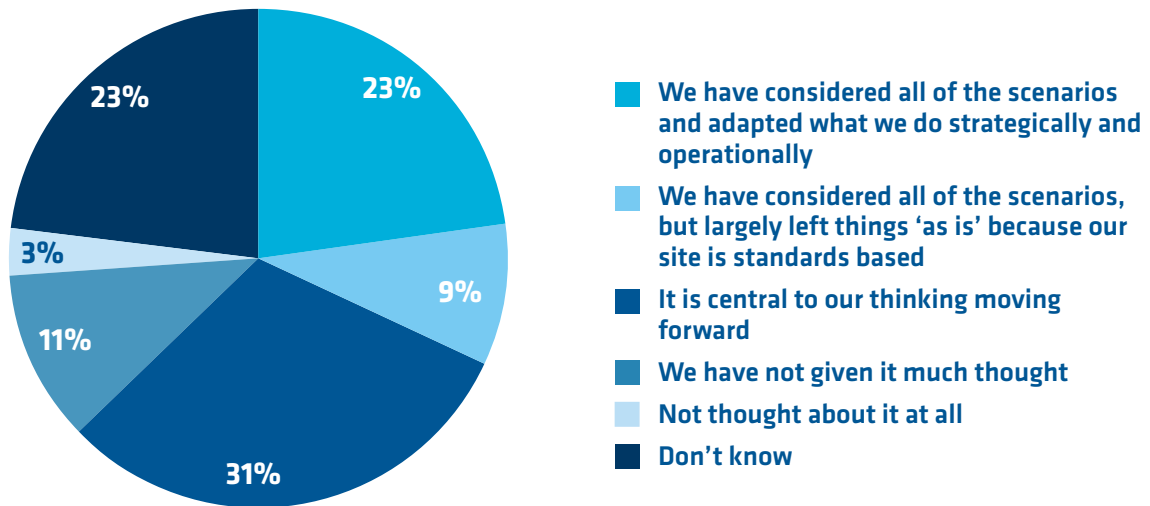
The bottom line for every organisation must be that all its websites and mobile apps should offer basic functionality and accessibility, because all recent surveys prove that increasing amounts of web access now come on demand from mobile devices.

Large international events provide ideal benchmarks of technology transformation and behaviour change. For example, statistics reveal that smartphone access of the London 2012 Olympic and Paralympic Games websites and apps was often on a par with desktop and laptop access, while significant minorities of other users accessed the same content via tablets and smart TVs.

Since Christmas 2012, which added 17 million new users of tablets and smartphones according to mobile analytics company Flurry, it is inevitable that such statistics will shift further towards these devices; indeed, it is a safe bet that the 2016 Games in Rio will be predominantly consumed via mobile devices, such as tablets or phones. But despite these shifting demographics, usage patterns and fast-changing behaviours, the statistics reveal that few sites are yet optimised for these devices.

Asked to what extent the organisation is rethinking its web presence in light of these new technologies and usage scenarios, an extraordinary 23 percent of IT specialists said that they didn't know (Fig. 2), while a perplexing 11 percent said that they have given it "no thought". Nine percent of IT managers responded that they have considered all the options, but largely left things "as is" on their standards-based websites.
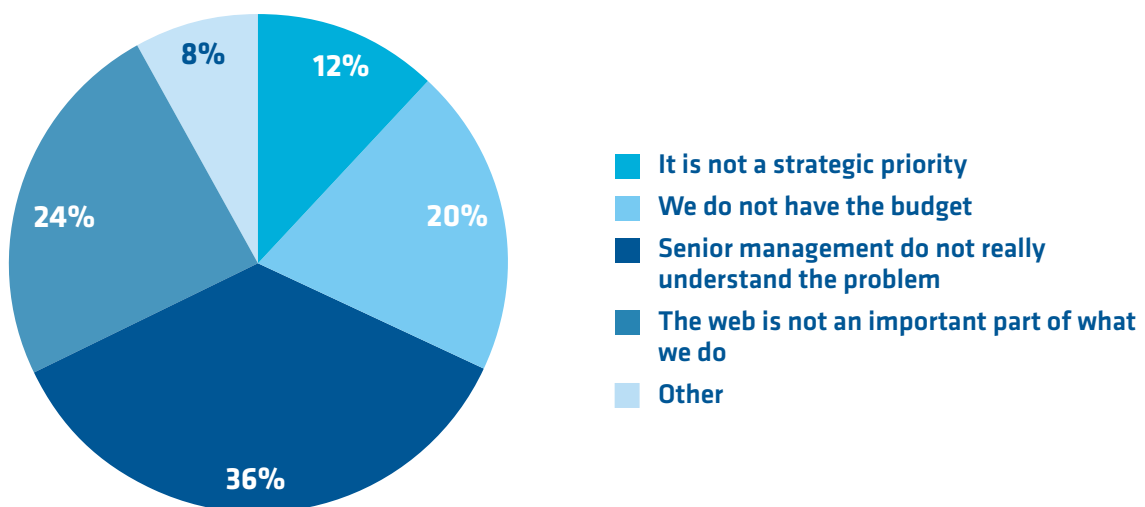
Fig. 2: To what extent has the organisation discussed rethinking its web presence in light of evolving usage patterns, device types and behaviours?

- **We have considered all of the scenarios and adapted what we do strategically and operationally**
- **We have considered all of the scenarios, but largely left things 'as is' because our site is standards based**
- **It is central to our thinking moving forward**
- **We have not given it much thought**
- **Not thought about it at all**
- **Don't know**

Encouragingly, more than 50 percent of respondents (54 percent) said that it was either central to their thinking moving forward, or that they had already adapted their strategies.

Of the naysayers, 12 percent said that designing experiences for users' mobile access needs is not a strategic priority (Fig. 3), 20 percent that they lacked the budget to do so, and 36 percent that senior business managers "do not understand the problem". Twenty-four percent answered that the web is "not an important part" of what they do. Despite that, ensuring basic informational access and functionality when users are on the move should be important to all organisations.

Fig. 3: If you have not considered rethinking or redesigning the web presence, what is the reason?

- **It is not a strategic priority**
- **We do not have the budget**
- **Senior management do not really understand the problem**
- **The web is not an important part of what we do**
- **Other**

Be realistic

Even if organisations' own surveys of their customer bases reveal relatively small proportions of users accessing the organisation via, say, iPhones or Kindle Fires, then those statistics will change and, in any event, it makes no sense to exclude those users from the full web experience. The internet is about access, not exclusion; at a fundamental informational level, it should be device-agnostic as, ultimately, it is about the content.

This means all organisations should be taking a much more intelligent approach to development for an age in which web access has left the desktop, but people's expectations of information depth, quality, design and accessibility remain constant and ever vigilant.

Mobile app development should, like traditional web development for the mobile environment, consider how apps might appear and be deployed across the proliferating number of mobile boundaries, platforms and operating systems. While some organisations' web developers might direct users to smartphone or tablet-specific versions of a static website, it makes economic and management sense to always use the same code for apps, but to consider in depth the implications of how the experience may differ from device to device and from platform to platform.

This demands the usage of a management tool that allow developers to "write once and deploy many" rather than create a multiplicity of different app versions for each different device or device type.

While this may involve considerable upfront investment – a tough sell in the current environment, perhaps – significant competitive advantage can be gained from enabling central governance and control of app deployment at code level.

However, the *Computing* survey reveals a troubling lack of insight into the usage habits of organisations' customers. This alone suggests that IT leaders are disconnected from the argument, and leaving themselves and their organisations completely at the mercy of outsourced app developers and web coders.

Asked what proportion of users accessed the corporate web presence at least some of the time via smartphones, 36 percent of IT managers could not answer the question (Fig. 4). Other responses seemed implausible or revealed a dearth of accurate information, with 22 percent answering that "less than 10 percent" of users access the website via smartphones.

Fig. 4: What proportion of your users access your organisation at least some of the time via smartphones?
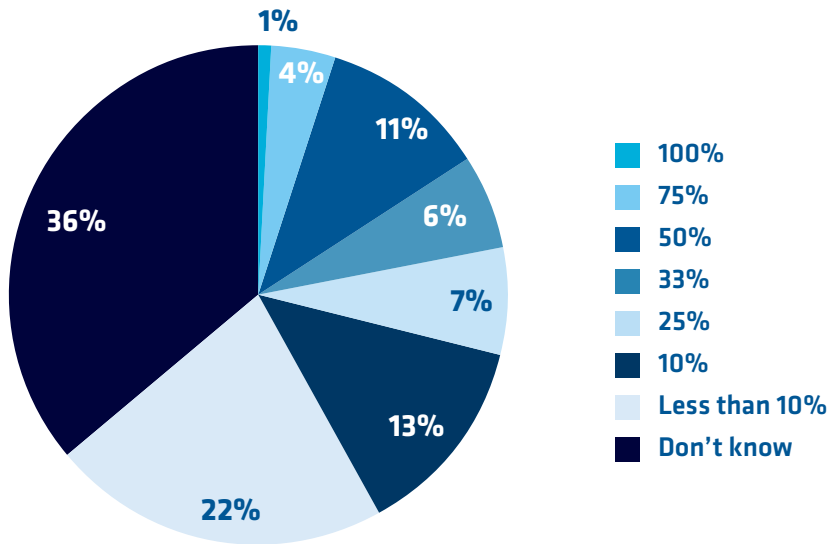
Challenged on levels of tablet access among users, again 36 percent of IT managers had no idea (Fig. 5), with one-quarter of all respondents saying "less than 10 percent".

Fig. 5: What proportion of your users access your organisation at least some of the time via tablets?
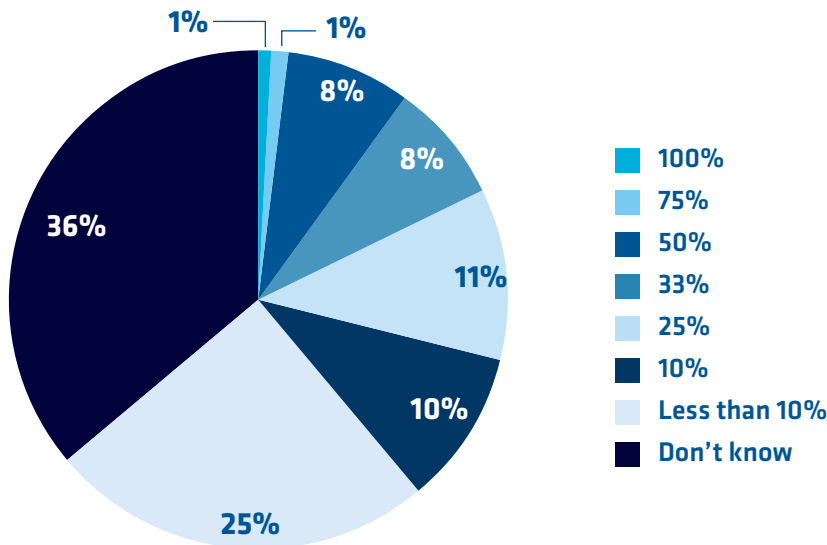
The levels of "Don't knows" and the lack of basic information about the devices types that users deploy make for troubling reading, especially given that a large majority of respondents work within large organisations and enterprises in the UK.

So it is no surprise that, when asked if their organisation had done any research at all into users' changing device types and usage patterns, 36 percent of senior IT specialists said "Don't know" (Fig. 6), while 25 percent answered "No". In all, just 39 percent of respondents said that the organisation had given the subject any strategic consideration.

Fig. 6: Has your organisation done any research on changing device types and usage patterns and how these may affect you?

- 36%
- 39%
- 25%
- Yes
- No
- Don't know
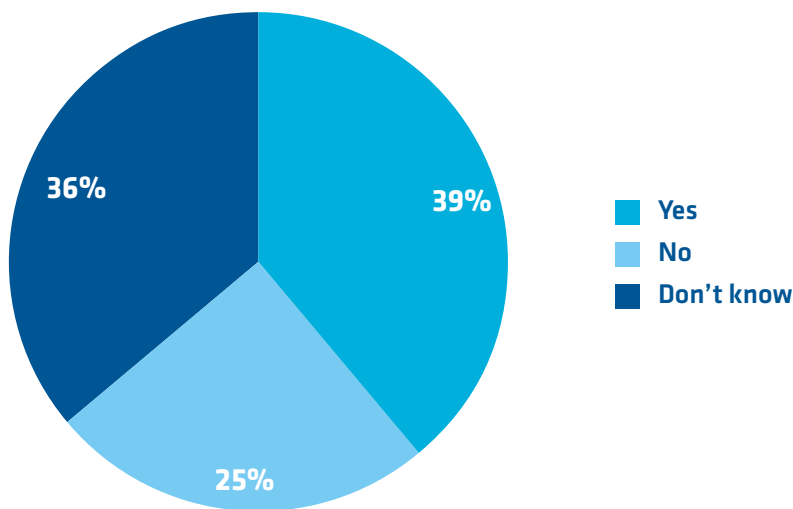
Asked if this could mean that the organisation had lost or might be losing business, as a result of scant consideration of mobile users, 37 percent admitted that it was possible (Fig. 7). Four percent answered yes, while 12 percent said that they did not know.

Fig. 7: Candidly, do you believe your organisation may have lost, or be losing, custom because its web presence is not designed for mobile users?

- 4%
- 12%
- 37%
- 47%
- Yes
- It's possible
- No
- Don't know
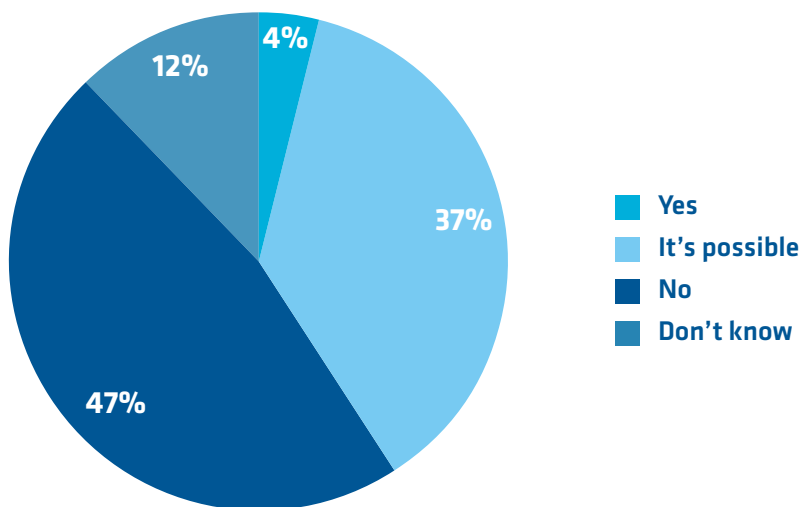
There is another dimension to this apparent lack of interest in frontline web presences: the related issues of governance, data management and data security. As IT roles evolve and become less about maintenance of on-premise systems and more about managing service levels and ecosystems of suppliers, the IT role will also become more focused on governance and data security. A lack of engagement with their own web presences suggest a semi-detached attitude to the underlying technologies and the data that resides on them.

Action points

In all, the survey reveals a lack of realism and strategic thinking. If an excellent web experience on the desktop translates into a second-rate or non-functional experience on a smartphone, or a website that cannot be displayed on an iOS device, then users will simply go elsewhere and opt for an experience that meets all of their access requirements.

All good developers separate out their HTML from the way the website looks. HTML provides structure and content, while CSS (cascading style sheets) provide a visual layer that sits on top of that. A further layer – typically of Javascript – adds behaviour. One option, therefore, is to show different CSS based on the device, or to code the stylesheet to do different things depending on the device.

For example, building media queries into a website will allow a layout to change from, say, two columns of text on a Kindle Fire to one scrolling column of text on a smartphone. Other organisations may, if budget permits, choose to direct users to a mobile-specific version of their site in preference to coding the site to morph into different formats. (The BBC News website, for example, redirects to a mobile-specific version on a smartphone.)

If this is the right avenue of approach, then the basic 'well' of content needs to be substantially the same and to conform to the same high standards.

Organisations should see the new mobile usage culture as an advantage, as a means to consider their users anew by predicting the kinds of experience that they might want based on their device and access habits. For example, on the latest smartphone, users might want location-based information to be accessible first, whereas on a desktop it might be the basic homepage, or ecommerce site. But in either case, the same underlying content should always be accessible, with a layer of different functionality coded on top.

However, the survey reveals that only relatively small percentages of IT specialists are aware if their own corporate web presence is able to sense users' geolocation and offer location-specific content.

All of this reveals that knowing the customer is of paramount importance: some types of user may be frustrated by different experiences on different devices; forcing people onto mobile-specific versions of sites may give them features they do not want or are confused by. Some users may simply want the basic homepage and to use to 'pinch and zoom' functions on their iPhone, for example, to move around a standard homepage. For such users, basic media queries and standards-based design can be a good option as it keeps things simple.

The golden developers' rule should be to come up with requirements first, rather than imposed solutions, and then work towards designing the best multi-platform web experience around the end user and what they prefer and/or require.

Responsive design – design that adapts to the device and the screen format – is one option; it is the solution that Barack Obama opted for to manage his own internet campaign for the 2012 Presidential Election; challenger Mitt Romney, on the other hand, went for the alternative option with bespoke sites for different platforms.

Neither approach is right or wrong, but the device-specific design approach can be alienating for some users, who may feel as though they have been misdirected, while the responsive design approach can have its limits if not sufficiently thought through. The mobile version of Obama's site, for example, was criticised for creating a very long, single column of text without page divisions.

Large organisations may suffer from having a very fractured or atomised approach to their web presence, and this can be a risk when creating a multiplatform web presence. Very strong, central command is important in such situations, especially when working towards an aim of 'write once, deploy many', and a coherent presence across all platforms.

Conclusion

In all, what used to be called 'Web 2.0' is now deeply embedded in most people's lives, with 4G networks and ultrafast broadband emerging. Tablets, smartphones, hybrid devices and more have swiftly become commodities, not luxury items, and increasing numbers of people much prefer the new paradigm to the static desktop of old.

Agile web development for the mobile, interconnected, device-agnostic present is a must for every organisation. It may be a challenge, but it is also an unparalleled opportunity to get to know the customer better: who they are, what devices they use, why they use them, and what experiences they might enjoy or require from each scenario.

In a down economy, these are precisely the sorts of relationships that organisations need to cultivate to hang onto their existing customers, as well as to find new ones.

The huge variety of different devices, operating systems and screen sizes poses a challenge for both website and app developers. This is why developers should consider working towards a 'write once, deploy many' approach to web and app development and why businesses should consider consolidating web production so that one code works for all devices.

This puts IT leaders back in the driving seat of development for the organisation rather than leaving themselves at the mercy of out-of-house developers, who are currently free to charge whatever they wish. IT leaders who are disconnected from even the basic facts about how the web and apps are used by their organisations' customers will not be in a position to challenge outsourced developers with any authority, and this also has governance implications.

So the opportunity is there for IT leaders to seize the day and put themselves at the centre of the decision-making processes behind intelligent, agile web development. Failure to do so could have serious consequences in future, in terms of data governance and responsibility.

IT decision-makers, therefore, should ensure they have the tools at their disposal that offer both a central means of controlling agile development, but also managing the core data assets.

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